

October 23, 2017

The Honorable Terence R. McAuliffe
Governor, Commonwealth of Virginia
Patrick Henry Building, 3rd Floor
1111 East Broad Street
Richmond VA 23219

Dear Governor McAuliffe:

In March, 2017 you asked me to undertake an independent review of the finances, management and operations of the Washington Metropolitan Area Transit Authority (WMATA). To carry this out, I spent the last six months reviewing information about WMATA and meeting with regional stakeholders. This letter describes what I found and contains my recommendations.

In performing this review, I worked closely with a team from the global engineering firm WSP. They collected data on WMATA's costs, revenues and other key indicators to compare it to other large U.S. transit agencies. WSP's benchmarking and other analysis is presented in a report being released in conjunction with this letter.

My findings and recommendations are as follows.

- ***Finding #1: WMATA General Manager Paul Wiedefeld is performing well.*** Turning around a major organization of any kind, whether a public agency or a private business, begins with the leadership team. Since coming on board in late 2015, Mr. Wiedefeld has not shied away from taking on the problems that have plagued WMATA for years. When lines needed to be temporarily closed to assure they were safe and reliable, they were closed. When employees failed to perform up to expectations, they were terminated. When service needed to be reduced to manage costs and assure maintenance could be performed, it was reduced. He is the right person for the job at hand.
- ***Finding #2: The WMATA board structure is not what the agency needs.*** The agency's board is too large, too fractious, and too oriented toward interests of the region's individual jurisdictions rather than the needs of the region as a whole. This is not the fault of the people currently holding seats on the board; these issues pre-date them and will persist after they leave unless something is done. Perhaps a poorly-functioning board could be tolerated if everything else was going well, but that is not our situation. For the next several years the board will need to focus on one thing: making the system safe and reliable. This will require tough decisions, and jockeying for position among the region's jurisdictions will need to take a back seat.

- ***Finding #3: WMATA's costs are mostly average.*** Much attention has been paid to the cost of running WMATA. This is as it should be; the agency provides a public service and it needs to be cost-effective. Our review found that WMATA's cost to deliver a unit of service is average for a large transit agency, and its wages are in line with the region's cost of living. Opportunities for improvement exist, several of which are pointed out in the report accompanying this letter. I hope WMATA's board and management will aggressively pursue them. WMATA has cost issues it can address, but they are similar to those at other agencies of its kind.
- ***Finding #4: Ridership has fallen, and this financials consequences.*** The years of steady ridership growth came to an end after 2015. Transit ridership is down modestly nationwide, but the decline at WMATA is far greater. Lost ridership means lost revenue, and the decline in patronage has put a major hole in WMATA's operating budget that state and local funders have had to fill. WMATA's biggest funder is its customers, and doing what it takes to bring them back is vital.
- ***Finding #5: WMATA offers more service per rider than other large transit agencies.*** Even as ridership declined, WMATA continued to add service – more and longer trains, more early-morning and late-night hours, and new Silver Line service. This was convenient for riders, but it came with a cost. For both bus and rail, WMATA has offered at least twenty percent more service per rider than the average large transit agency, which leads to higher costs than in other metro areas.
- ***Finding #6. WMATA has no capital funds of its own, and the jurisdictions that fund its capital needs have not provided enough to keep the system in acceptable condition.*** The Metrorail system opened in 1976, and for many years it performed well because the tracks, stations and other key systems were mostly new. But the system is now 40 years old and much of it needs renewal or replacement. Unfortunately, the funders that pay for WMATA's capital program have grown accustomed to contributing at a level adequate for a new system, but far too low for an aging system.
- ***Finding #7: WMATA can be improved without opening the Interstate Compact that governs it.*** WMATA is unusual among transit agencies because it operates in multiple states. For this reason, it is governed by an Interstate Compact between D.C., Maryland and Virginia. Any changes to this agreement require legislative approval in all three jurisdictions and an Act of Congress signed by the President. This process can take years. I do not believe we can wait to reform WMATA, and so the recommendations I am offering can all be carried out without waiting for a change to the Compact.

Based on these findings, I propose the following actions to improve WMATA.

- ***Recommendation #1: Install a temporary Reform Board.*** For WMATA to succeed, its board needs to change. I propose the current 16-member board be temporarily replaced by a five-member Reform Board. One member each would be appointed from D.C., Maryland, Virginia and the federal government, and the four appointing authorities would jointly agree on a fifth person to serve as Chair. These new appointees would be given a very clear

mandate: bring WMATA back to what it once was, the best transit system in America. The findings in this letter and the accompanying report provide a roadmap to follow. I estimate it will take three years of sustained effort to assure WMATA is on the right path, and during this time the Reform Board would develop a recommendation for a transition to a new permanent board.

- ***Recommendation #2: Offer service that matches actual demand.*** For both bus and rail, WMATA has offered more service – more buses and train cars running more hours on more routes – than its peer transit agencies. With Metrorail, this mostly emerged over the last decade as ridership fell and service kept expanding. Mr. Wiedefeld has trimmed rail service for FY2018, and if rail ridership begins to grow again, a major re-think of rail service levels may not be needed. If rail ridership does not grow, more painful choices will need to be considered. The situation with Metrobus is different. Service levels have been high going back at least 15 years, and there is no indication bus ridership will grow to match the current level and pattern of service. For these and other reasons a major reset of the WMATA bus system is needed. This is discussed in further detail in the accompanying report. The idea is not simply to curtail low performing bus routes. Something much more comprehensive is needed. By re-examining the entire system of bus routes, schedules and operating practices, we can find opportunities for things like more efficient routing that save money and improve service. Other cities have reset their bus systems in this way in recent years, most notably Houston.
- ***Recommendation #3: Manage costs and increase productivity in the next labor contract.*** Although WMATA's pay, benefits and employment policies are similar to those at other large transit agencies, improvement is still possible. On average, WMATA's unionized workers contribute about three percent of pay toward pension, well below the national average for workers with similar pensions. WMATA workers count overtime earnings toward retirement pay with no cap; many other agencies either cap or prohibit this. The freedom for WMATA workers to pick their shifts should not extend to working excessive hours consecutively beyond what is safe. The next labor contract is an opportunity for reform in these and other areas.
- ***Recommendation #4: Reliably deliver a large capital program.*** WMATA needs to increase the pace of repairing aging infrastructure. This is beyond question. But those who are asked to fund this will hesitate if they doubt WMATA is capable of actually spending new money. Unfortunately, this has been a major shortfall in the past. For much of the last decade, WMATA was rarely able to spend more than 80 percent of the capital funds it budgeted for a given year. Performance has improved markedly under Mr. Wiedefeld; in FY2017 WMATA carried out more capital work than it had budgeted – a first – and invested significantly more than in any previous year. This is welcome news, but annual investment levels will need to continue rising for WMATA to have any hope of tackling its backlog of deteriorated assets.
- ***Recommendation #5: Give WMATA new, dedicated capital funding.*** WMATA's infrastructure is aging and needs renewal, and the funding it receives today is not enough to get this done. Not even close. Mr. Wiedefeld has estimated a need for \$500 million per year

in new capital funding; WSP's analysis produced a slightly higher estimate, \$540 million per year, although it also identified areas for operating cost savings that could make up the difference. I think \$500 million per year should be our target. WMATA's problems will never be solved without this new money.

That said, the amount is not the only thing that matters. The major surge in capital spending that is needed will not be possible without WMATA taking on new debt, and this will be possible only if new funding is dedicated in a way that is accepted by the capital markets.

The final question is how to raise these funds. I am not proposing a specific method because many different arrangements would work. A single uniform source across the region, such as a sales tax, has been used with success in other places. However, the complex jurisdictional structure in our region makes this very challenging. Each of WMATA's funding partners will need to play a role, and each can generate its share in a way that makes sense for them. The methods can be different so long as the key criteria are met: the total is sufficient, the funds are dedicated, and they arrive soon.

- ***Recommendation #6: Create a new dedicated source of capital funding for WMATA at the federal level.*** WMATA is unique among U.S. transit systems because of its relationship with the federal government. Nearly 40 percent of rush hour Metrorail riders are federal employees, and this gives the federal government a special responsibility to help WMATA succeed. In 2008, Congress authorized \$1.5 billion in special WMATA funding over 10 years as part of the PRIIA legislation, to be matched by an equal amount of state and local funding. This raised the level of capital commitments to WMATA from all sources from roughly \$500 million per year to around \$800 million per year. It was a huge help, but \$800 million per year is not nearly enough. More troubling still, PRIIA funding is set to expire and it is not clear if it will be renewed.

Congress and the administration should create a successor program of dedicated WMATA funding to take over once PRIIA funding expires. If the state and local governments in the region increase their contributions to WMATA, so should the federal government. And just like any new state and local funds, if possible these federal funds should be legally dedicated to WMATA so they can be used to back bonds. In my discussions with members of the region's Congressional delegations I found essentially universal support for WMATA. They know it needs to succeed, and they're willing to help. Achieving an increase in federal funds will be difficult, but I trust that the members of the House and Senate that represent this region will do all they can to make it happen.

If these recommendations are followed, I am optimistic about WMATA's future. The Washington D.C. region is vibrant and growing, in part because of its transit infrastructure. Riders may not come back immediately, but if we make the system safe, reliable and convenient, they will come back eventually. However, if these recommendations are not followed, I cannot be optimistic about the future. The last decade has not been a good time for WMATA, and we need to make major changes to its leadership, operations and funding to turn this around.

These changes will happen only if the region's leaders and the federal government take the difficult steps needed to put WMATA back on the right path. On this point, I would like to commend you, Governor McAuliffe, for the leadership you have shown in bringing attention to this issue. I am honored that you asked me to offer my perspective, and I hope you and others in Virginia will find it useful, just as I hope that leaders in Maryland, the District of Columbia and at the federal level will as well.

Please feel free to call on me in the future in any way you feel could help in returning WMATA to what it once was – America's number one transit system.

Sincerely,

Ray LaHood

EXECUTIVE SUMMARY

This report compares the Washington Metropolitan Area Transit Authority (WMATA) against other large transit agencies on a variety of indicators. Data reflects 2015 unless otherwise stated.

Cost Structure. By multiple measures, WMATA's cost structure is generally average for a large transit agency. All-in labor costs per hour, including salaries, wages and fringe benefits, are average. The unit cost to deliver service, as measured by total operating and maintenance (O&M) spending per hour of service delivered, is average for Metrobus and nine percent above average for Metrorail. Higher than average rail O&M costs derive from rail maintenance spending that is 20 percent or more above average. Costs for rail operations are average.

Although WMATA's unit costs to deliver service are mostly average, it delivers high levels of both bus and rail service considering the level of ridership. Bus service hours per 10,000 passenger trips are 25 percent above average, and rail service hours per 10,000 passenger trips are 22 percent above average. Bus service levels have been high going back at least 15 years. For rail, high service levels per rider emerged mostly after 2010, as ridership fell and service kept expanding. In mid-2017 WMATA reduced train frequencies significantly, and this should result in an improvement in the ratio of rail service to rail ridership. Corresponding changes to bus service were much more limited.

Two labor policies that contribute to cost were found to be outliers. On average WMATA's hourly employees contribute three percent of wages to pension, where the national average among all workers in defined benefit plans is seven percent. In addition, WMATA's unionized employees count overtime earnings in determining post-retirement pension payments. Changing these policies would generate savings, although it should be noted that WMATA's all-in labor costs per hour were average even with these policies in place.

Funds Paid by State and Local Governments in the Region. Under the WMATA compact, any costs not covered by federal grants, fares or other internally-generated revenue are paid by the region's jurisdictions. Even though WMATA's costs are average for a large transit agency, these state and local payments have been growing rapidly, at nearly 10 percent per year. This steep increase is almost entirely caused by four factors:

- Purchase of new rail cars;
- Increased spending on rehabilitating the WMATA rail system;
- Growth in contributions to pension plans; and
- A large revenue decline due to falling ridership.

After accounting for these factors, all other WMATA costs grew at around three percent per year.

Board Operations. With 16 members, WMATA's board is large. The average transit agency board has nine members. The WMATA board has nine committees or subcommittees, tied for the highest number among large peer transit agencies. Recent efforts to streamline the committee structure have not been successful. The WMATA board also has many meetings – there were 85 board, board committee and board subcommittee meetings between June 1, 2016 and May 30, 2017.

WMATA's board includes elected officials, a trait it shares with 22 percent of transit agency boards. However, because of the way WMATA is funded, the elected officials on its board could be characterized as 'dual fiduciaries' – that is, each is responsible for the finances of both WMATA and a local government that make payments to WMATA. This arrangement is very rare at other large transit agencies, which are mostly supported with dedicated taxes.

Opportunities For Improved Financial Performance. The report presents six measures to improve WMATA finances. In dollar terms, the largest is a return of rail ridership. Metrorail ridership declined 14 percent between FY2015 and FY2017, while other U.S. heavy rail systems saw a decline of just two percent. Returning to FY2015 levels (minus the effects of this broad national decline) would reduce the need for operating subsidies by as much as \$57 million per year. WMATA's customers are its biggest funder, and their choices heavily influence the agency's finances.

The WMATA bus system is ripe for a major reset that would update where and when service is offered. The scenario developed for this report would yield a subsidy reduction of as much as \$38 million per year, through a combination of reduced costs and increased revenues. Bringing employee contributions to pension up to the national average of seven percent of pay could be expected to yield \$25 million per year. Other changes – less fare evasion, more advertising, lower absenteeism – could yield an additional \$35 million per year combined.

Implementation of these measures could be expected to take several years, and achieving full results on all fronts simultaneously would be difficult. Nonetheless, it seems reasonable to estimate a possible reduction in expected operating subsidies of at least \$40 million per year after several years. As described below, this reduction in operating payments by the region's jurisdictions would allow funds to be shifted to capital needs.

Need for Capital Investment. The WMATA rail system opened in 1976, and many of its components began to reach their 30-year useful life around 2006. A major increase in capital funding would have been appropriate at this point. Unfortunately, PRIIA funds were not approved by Congress until FY2009, and these funds did not flow to WMATA until FY2011. It took even longer for WMATA to ramp-up spending to use the new funds. In FY2017, capital investment finally reached a level sufficient to stabilize the system, but the decade-long lag between growing need and lower-than-necessary investment helped create a backlog of deteriorated assets currently estimated at \$7 billion. In addition, as each year passes additional assets wear out and must be renewed. Over the period FY2018 to FY2026, this ongoing need is estimated at a further \$1.1 billion per year.

To estimate the funding needed to cover all these state-of-good-repair needs, a financial model of WMATA's capital program was developed out to 2040. It estimates that WMATA would require additional capital funds of \$540 million per year above current contributions from its federal, state and local funding partners. If savings to the operating budget of \$40 million per year are achieved as stated above, this need could be met with \$500 million per year in new capital funding. This funding would cover only WMATA's state-of-good-repair needs; any expenditures to enhance the system would require supplemental funding.

To eliminate its state-of-good-repair backlog in a timely manner, WMATA would need to pledge a large portion of new revenues to back new borrowing, estimated by the model at \$6 billion. For this reason, new funding would need to be dedicated in a manner adequate to secure bonds.

ORIGIN AND METHODOLOGY

In February, 2017, the Commonwealth of Virginia enacted a requirement calling for “an objective review of the operating, governance and financial conditions” at the Washington Metropolitan Area Transit Authority (WMATA). The review was required to “compare WMATA to other rail transit systems in the United States ...” (Conference Report for House Bill 1500, Item 436#3c, 2017.) The Virginia Department of Rail and Public Transportation then contracted with the global consulting and engineering firm WSP to perform the analysis. This report presents the results of this analysis.

The primary source of information used was the National Transit Database (NTD). This database is maintained by the U.S. Department of Transportation’s Federal Transit Administration (FTA) and contains data reported by all transit agencies in the U.S. that receive federal funds. At the time this report was prepared, the latest year of NTD data for all agencies was 2015.

This report compares WMATA to eight other large transit systems: the New York Metropolitan Transit Authority (NYMTA); the Chicago Transit Authority (CTA); the Los Angeles County Metropolitan Transit Authority (LAMTA); the Massachusetts Bay Transportation Authority (MBTA); the Southeastern Pennsylvania Transportation Authority (SEPTA); New Jersey Transit (NJT); the San Francisco Bay Area Rapid Transit District (BART); and the Metropolitan Atlanta Rapid Transit Authority (MARTA). Unless otherwise noted, WMATA Metrorail is benchmarked against the heavy rail systems of seven of these eight agencies; NJT is excluded because it operates commuter rail and light rail but not heavy rail. WMATA Metrobus is also benchmarked against seven systems; BART is excluded because it has no bus system.

CONTENTS

EXECUTIVE SUMMARY	1
ORIGIN AND METHODOLOGY	3
PART 1. COMPARISON TO OTHER LARGE TRANSIT AGENCIES.....	4
Workforce.....	4
Pensions.....	6
Safety and Security.....	8
Bus Operations and Maintenance	8
Rail Operations and Maintenance.....	9
Capital Program.....	11
Long Term Financial Sustainability.....	12
Governance	13
PART 2. RECOMMENDATIONS.....	15
Operating Deficit Reduction Measures.....	15
Additional Capital Funding.....	17

PART 1. COMPARISON TO OTHER LARGE TRANSIT AGENCIES

Workforce

During its fiscal year 2017 (July 1, 2016 to June 30, 2017) WMATA had 13,032 authorized positions. Actual employment levels fluctuate below the authorized level during the year due to ebbs and flows in hiring, retirements and other factors. As shown in Figure 1, authorized staffing levels increased from FY2010 to FY2017, with some of this growth associated with the opening of the Silver Line Phase 1 in 2014. For FY2018, authorized staffing levels were reduced by 1,000, with some of the decrease coming from elimination of unfilled positions.

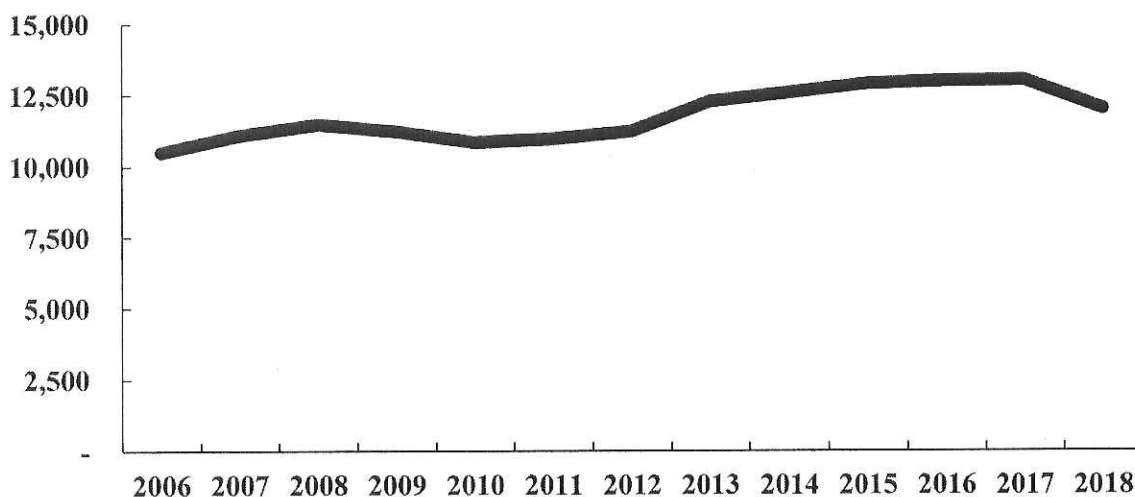


Figure 1. Total approved headcount for WMATA, FY2006 - FY2018. Source: WMATA.

Like most U.S. transit agencies, WMATA's labor force is heavily unionized; 82 percent of employees belong to a union. The remaining 18 percent do not belong to a union. Union representation is divided among five union locals, with the largest being the Amalgamated Transit Union (ATU) Local 689, which represents 66 percent of WMATA employees.

Wages for WMATA's unionized employees are set by collective bargaining. The last two labor agreements with ATU Local 689 led to a slight increase in the net value of wages. Real wages, after accounting for employee contributions to pension and Washington, DC area inflation, are four percent higher in 2017 than in 2008. This small increase in the real value of wages occurred between 2015 and 2017. Wage increases in these years were similar to prior years, but inflation fell to unusually low levels and this allowed for a small increase in real earnings.

Wage levels heavily influence the agency's total cost in delivering service. Figure 2 compares the all-in cost of WMATA's workforce on an hourly basis, including all salary, wage and fringe benefit costs, to its peer transit agencies. In some years WMATA's hourly costs were slightly above the peer average and in some years they were slightly below. Overall, WMATA's hourly labor costs have been consistently average or close to it.

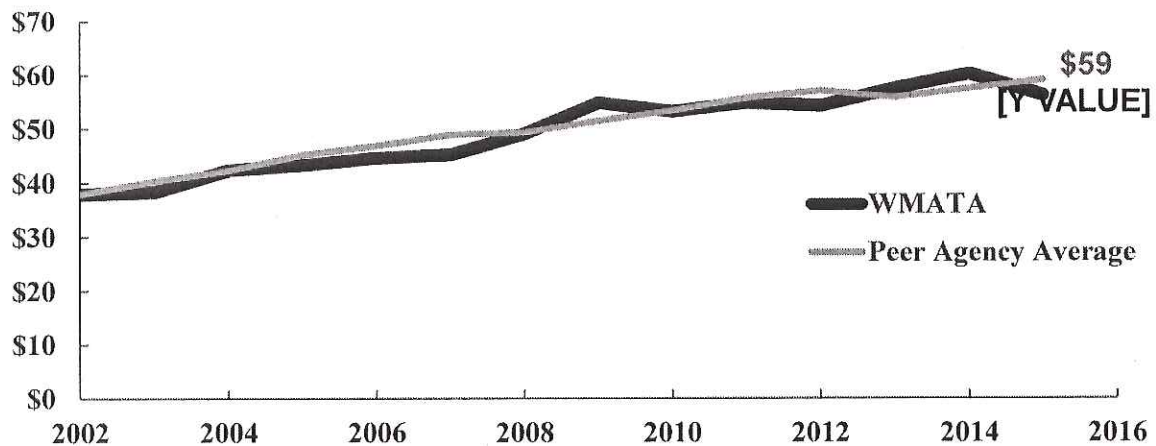


Figure 2. Total cost of wages, salaries and fringe benefits per hour worked, WMATA vs. large peer transit agencies. Source: NTD.

WMATA employees are not allowed to strike. Instead, union employees are subject to binding arbitration if labor and management cannot reach agreement. It has been suggested that a regime that gives labor the right to strike and eliminates binding arbitration could lead to lower agency costs for wages and fringe benefits. To test this hypothesis, all-in labor costs per hour worked at peer agencies that allow strikes were compared to those same costs at peer agencies where strikes are not allowed. No difference in labor costs between the two groups was found.

One additional method was used to assess WMATA labor costs. Average hourly compensation at each transit agency (not including fringe benefits) was compared to its region's cost of living. (Cost of living was determined using the Economic Policy Institute's estimate of the cost for one adult and one child to "attain a modest yet adequate standard of living" in various regions of the country.) Overall, the average WMATA employee earns 106 percent of the DC region's cost of living, which makes WMATA average among peer transit agencies.

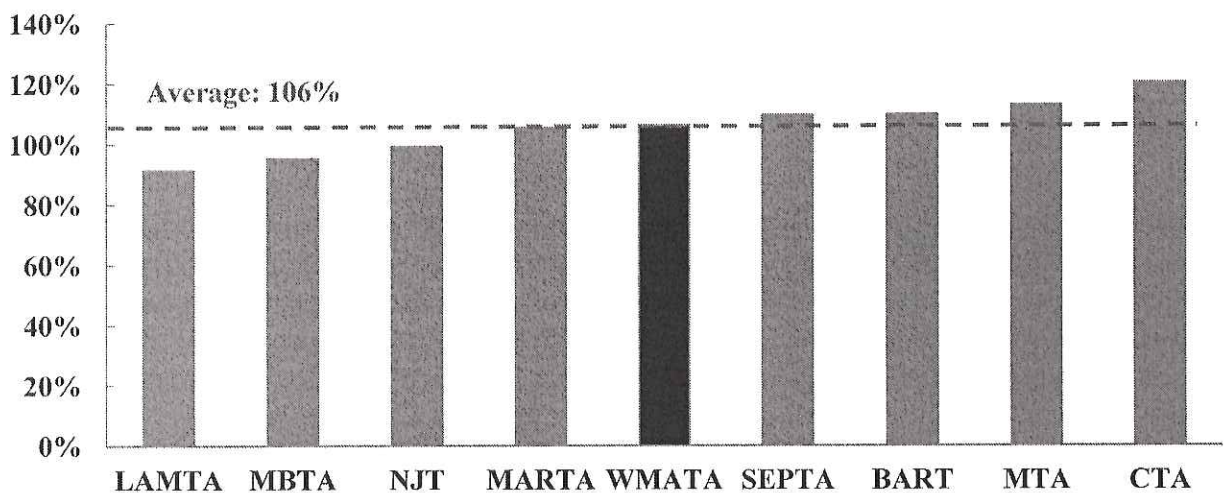


Figure 3. Average wage of transit employees as percent of a region's cost for one adult & one child "to attain a modest yet adequate standard of living", 2015. Sources: NTD; Economic Policy Institute.

WMATA maintains two notable labor policies that were found to be outliers. On average, hourly employees contribute 3.1 percent of wages to pension, where the national average reported by the Bureau of Labor Statistics for all workers in defined benefit plans is 7.1 percent. In addition, WMATA's union employees count overtime earnings in determining post-retirement pension payments. Some public agencies allow this and some do not.

However, these two items should be viewed in context. First, even with these policies in place, WMATA's all-in labor costs per hour have been average among peer transit agencies. Second, WMATA's method of calculating base retirement payments is slightly less generous than an average of 20 selected local agencies. As shown in Figure 4, the WMATA retirement formula pays an employee retiring at age 62 with 30 years of service 55 percent of their final annual salary. The average paid by the 20 city and county governments shown in Figure 4 is 60 percent.

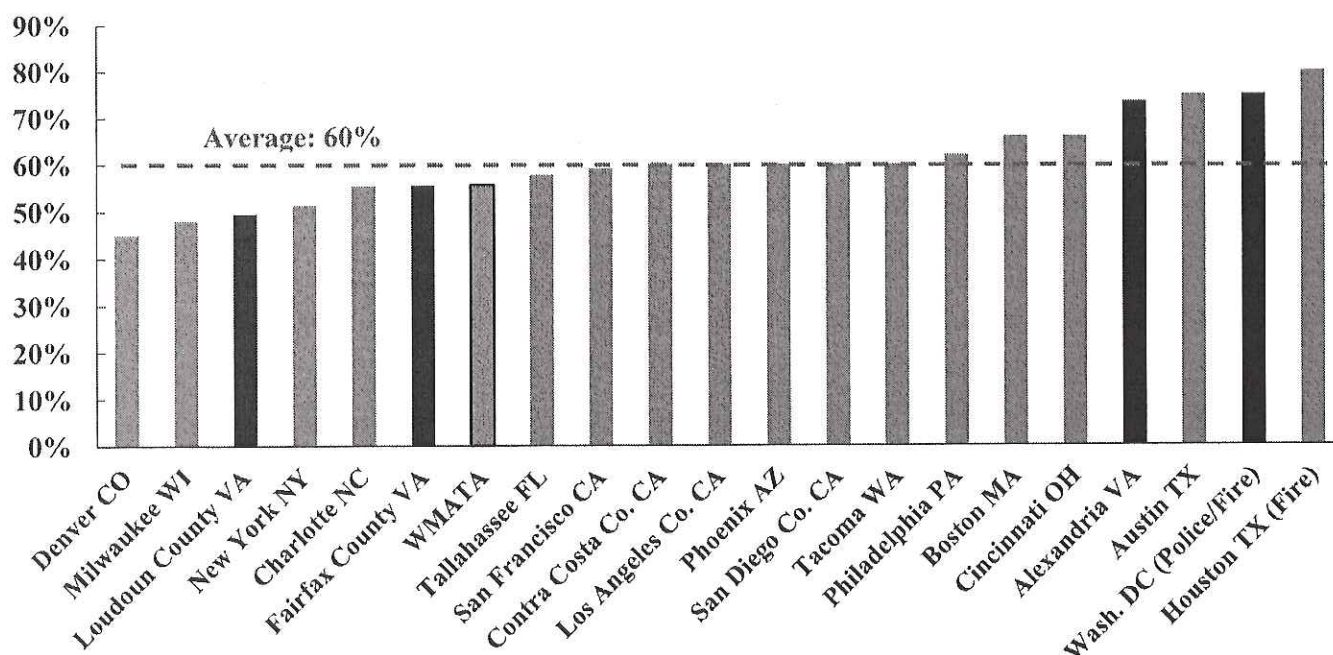


Figure 4. Retirement payments as a percent of final annual salary for an employee with 30 years of service retiring at age 62. Source: Center for State & Local Government Excellence; "Retirement Benefit Decisions by City and County Governments"; WMATA labor agreements.

Pensions

WMATA maintains defined benefit pension plans for most of its unionized employees. Under these plans, employees earn credit based on years of service and final annual salary, and receive benefits after they retire. WMATA management employees are in a defined contribution plan, similar to a 401(k).

Like most government agencies, in recent years WMATA has seen both pension liabilities and annual pension contribution amounts escalate. Several factors are at play.

- People are living longer and this leads to increasing pension liabilities. The expected lifespan of the average American adult has increased by around two years in the last 25 years, which represents more than a 15 percent increase in expected life span after the normal retirement age of 65.
- Most pension payouts to retirees are generated by investment returns on accumulated pension assets. When investment returns are strong, the burden on employers and employees to fund the pension is reduced. Inconsistent investment returns from early 2000s through the recent financial crisis led to increasing demands on employers to make pension contributions out of annual budgets.

One measure of pension health is the so-called 'funding ratio', which represents the total expected value of a pension fund compared to its total expected payouts. As shown in Figure 5, in 2015 WMATA's pensions were 77 percent funded on average. This placed them on par with or slightly above both the national average rate for public pensions of 75 percent and major pensions in Maryland and Virginia. DC's two remaining defined benefit pensions were stronger.

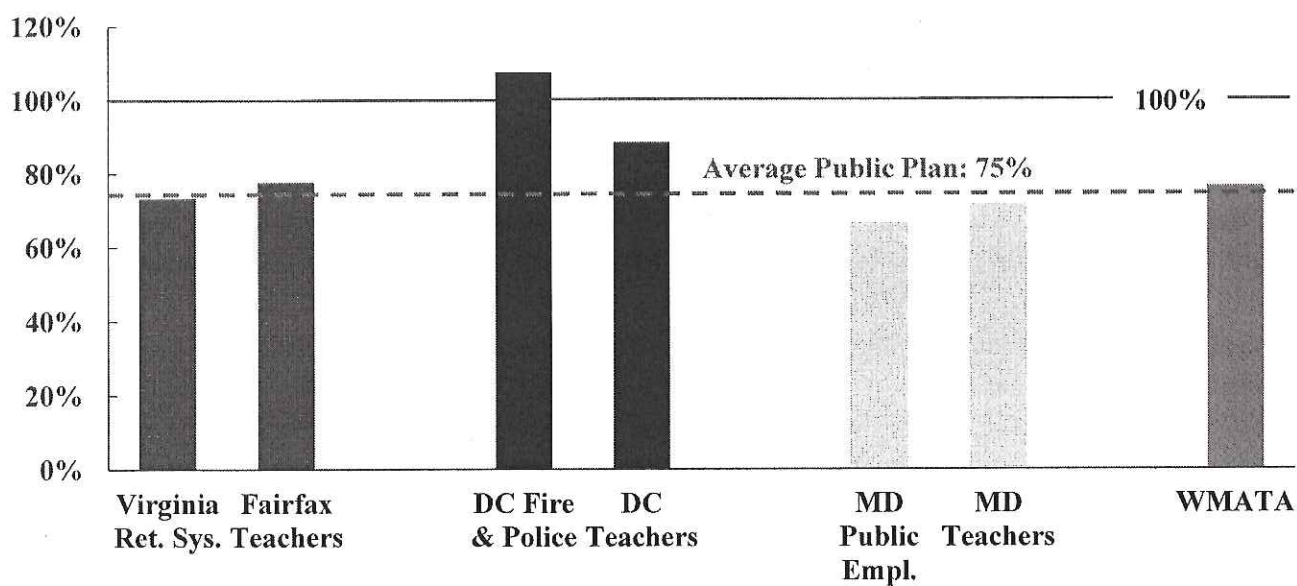


Figure 5. 2015 funding ratios for WMATA pension plans and selected DC, Maryland and Virginia plans. Source: Boston College Public Pension Plan Database; WMATA.

Although escalating contributions to pension have been a major cost item for WMATA in recent years, contribution amounts have stabilized since 2015. This is partly due to stronger investment returns and partly to new employee contributions to pension arising from the last labor contract cycle. Employee contributions to pension that had been in place when WMATA was created were terminated as part of a labor agreement in the 1980s, and these were finally restarted in 2015. In sum, although WMATA has pension problems, there is no evidence these problems are out of character with the similar challenges faced by many other public agencies.

Safety and Security

WMATA's performance on several measures of safety and security is presented in Figure 6.

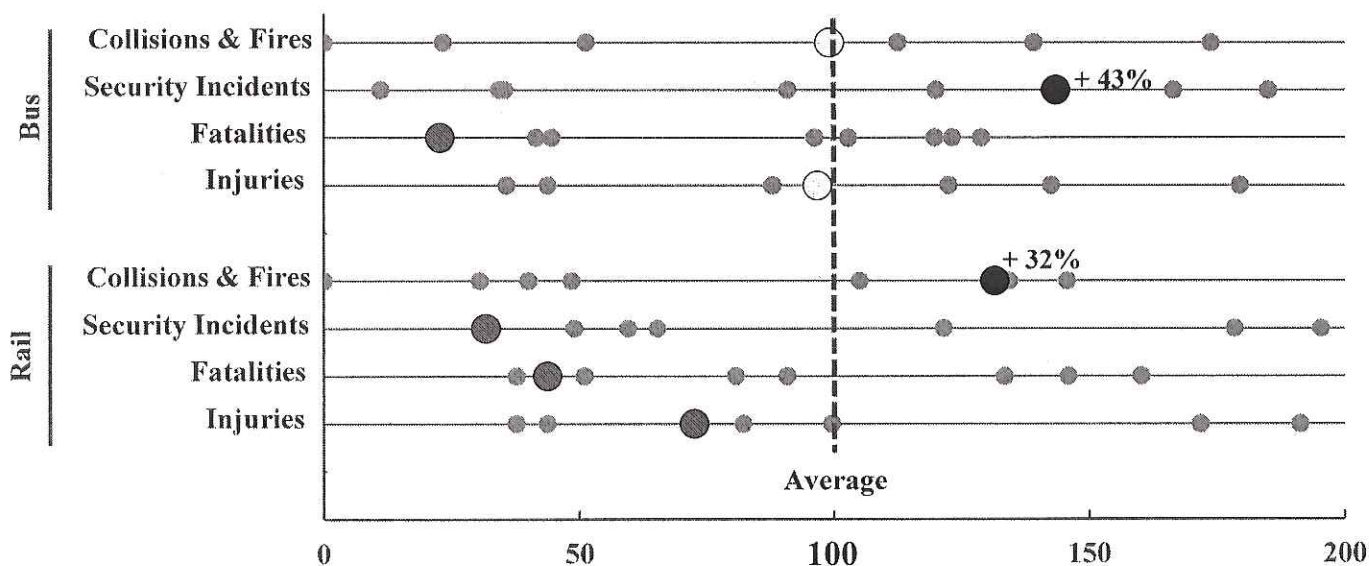


Figure 6. WMATA safety and security incidents compared to eight peer transit agencies, 2014-2015. Source: NTD.

During 2014 and 2015, WMATA was average or better than average on six out of eight measures, and worse than average on two measures. The number of security incidents on Metrobus was higher than the average of peer agencies, as were collisions and fires on Metrorail.

Bus Operations and Maintenance

A common financial measure for transit service is the 'fare box recovery ratio', which measures how much of a service's ongoing operations and maintenance expense is being recovered through fares. In 2015, fare box recovery for WMATA's Metrobus system was just 23 percent, well below WMATA's peer agencies, which recovered 32 percent of their bus O&M costs on average. This is displayed at the top of Figure 7, where WMATA is shown as performing 26 percent worse than average.

This poor fare box recovery is not due to high costs. WMATA's cost to deliver an hour of bus service is average. The various components that produce this unit cost are shown in Figure 7, including wages, fringe benefit costs, and the efficiency of the both the operating and maintenance workforces.

Metrobus' poor fare box recovery is due to two non-cost factors. The first is low fares. Until mid-2018, WMATA's bus fare was \$1.75, lowest among peer agencies. The base fare has since been raised to \$2.00, closer to the peer average of \$2.16. However, a weekly pass still costs \$17.50. The second factor is high service levels compared to ridership. Hours of bus service offered by WMATA per 10,000 passenger trips are 25 percent above the peer average.

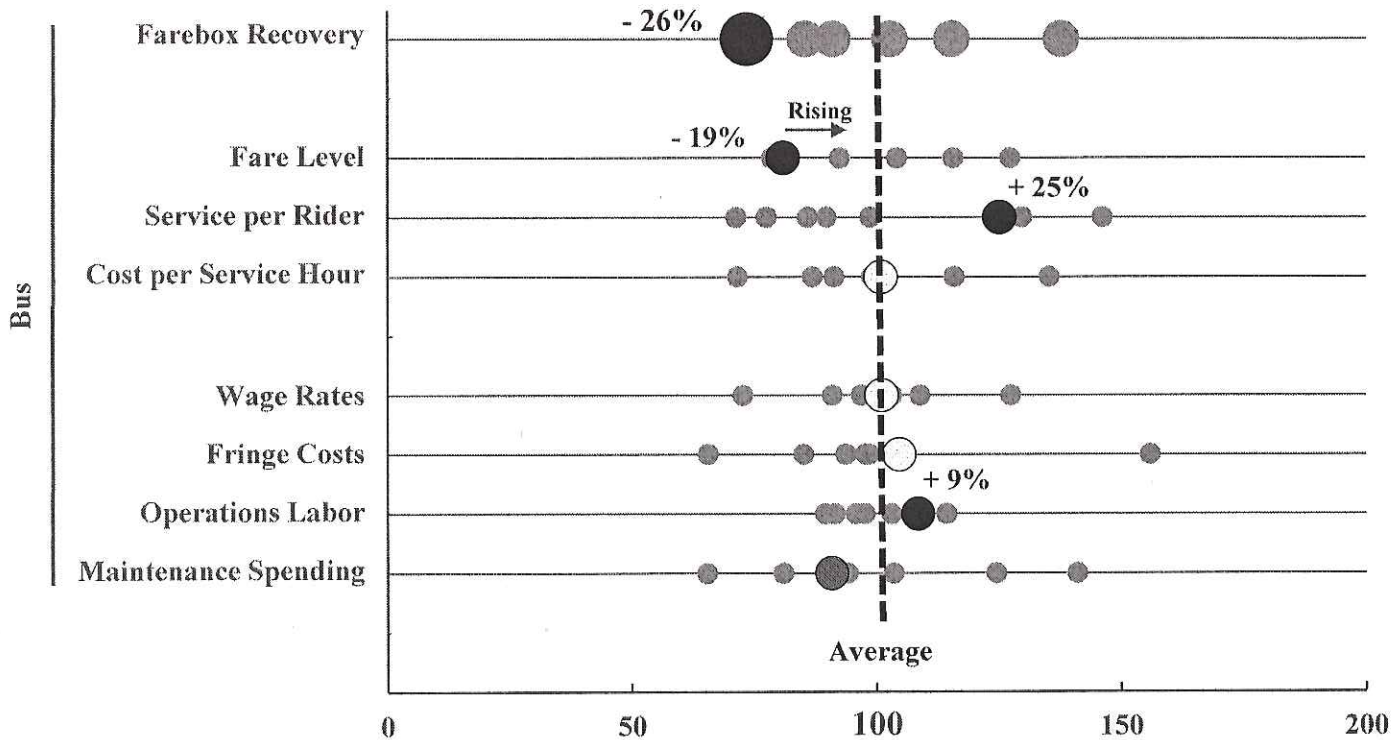


Figure 7. WMATA 2015 bus system performance vs. seven peer agencies. Source: NTD.

Low fare box recovery could be partly caused by fare evasion, but it is difficult to estimate the magnitude of this using publicly available data. Anecdotal evidence suggests that fare evasion has been rising. A consistent pattern of high service levels per rider and low fares on Metrobus has existed for many years. The recent increase to a base fare of \$2.00 makes today's Metrobus base fare as high as it has ever been on an inflation-adjusted basis, but still below the average of peer transit agencies.

The indicator labeled 'Operations Labor' depicts the number of labor hours for bus operations and administration that are required to deliver one hour of bus service. The nine percent excess indicates that labor is being used somewhat less efficiently at Metrobus than at peer bus agencies. This is one of the factors supporting the call for a comprehensive 'bus reset' described in Part 2.

Rail Operations and Maintenance

In contrast to Metrobus, fare box recovery for Metrorail was higher than the peer average in 2015, although declining ridership since then has likely led this figure to drop closer to the peer average. This is shown in Figure 8.

Higher than average fare box recovery was primarily due to high fare levels compared to other heavy rail systems. Service levels on Metrorail were also higher than average – in 2015 WMATA offered 22 percent more rail service per 10,000 passenger trips than the average of peer agency heavy rail systems. WMATA's operations and maintenance cost per hour of rail service delivered was nine percent above the peer average. This is due to higher than average maintenance spending. Other inputs to costs – wage costs, fringe benefit costs and overall operations costs – were average or below average.

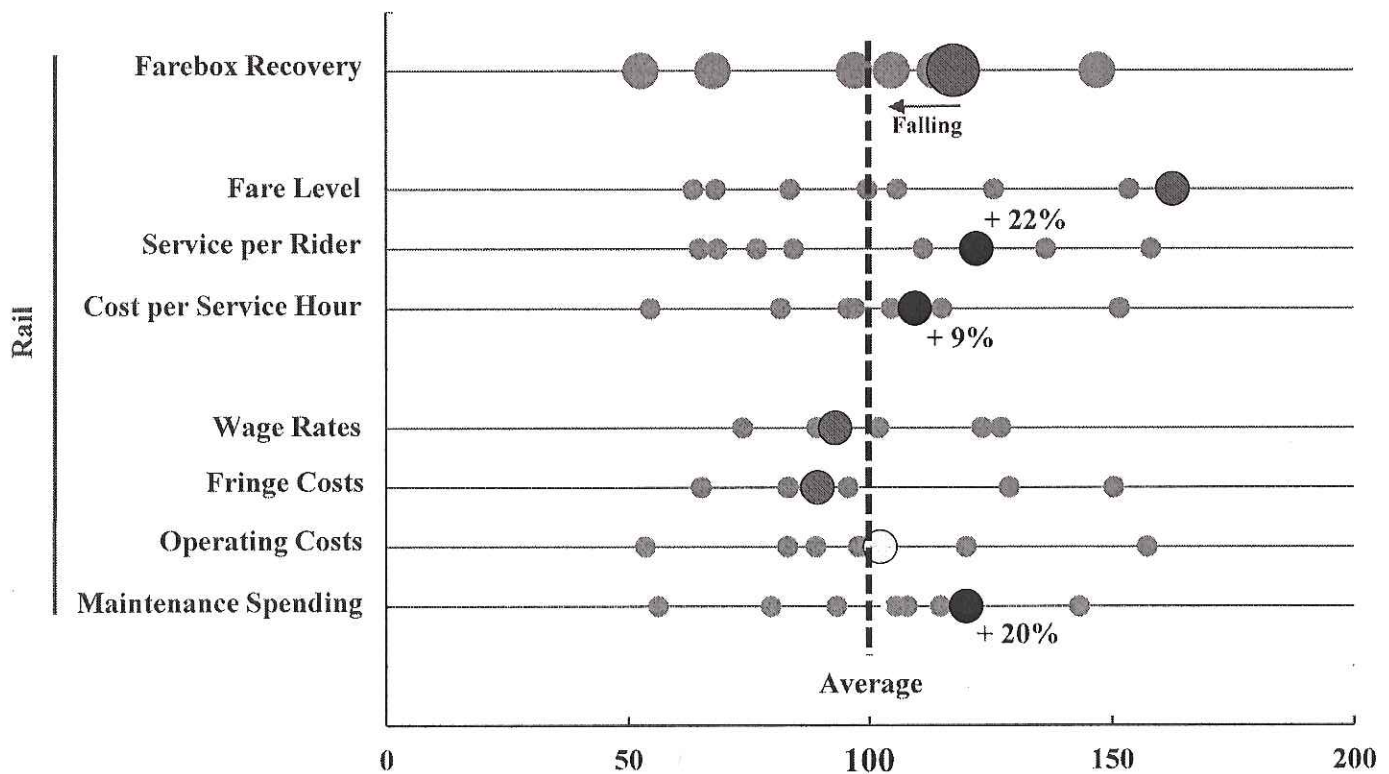


Figure 8. WMATA 2015 rail system performance vs. seven peer agencies. Source: NTD.

Unlike Metrobus, the higher than average level of Metrorail service per 10,000 passenger trips is a relatively recent phenomenon. In 2002, Metrorail's service levels per passenger were exactly average when compared to peers. Between 2002 and around 2010, both ridership and service levels grew. However, since 2010 ridership has been mostly flat or declining, while service levels have continued to rise. The notable increase in service levels in 2015 shown in Figure 9 is mostly the result of the opening of Silver Line Phase 1.

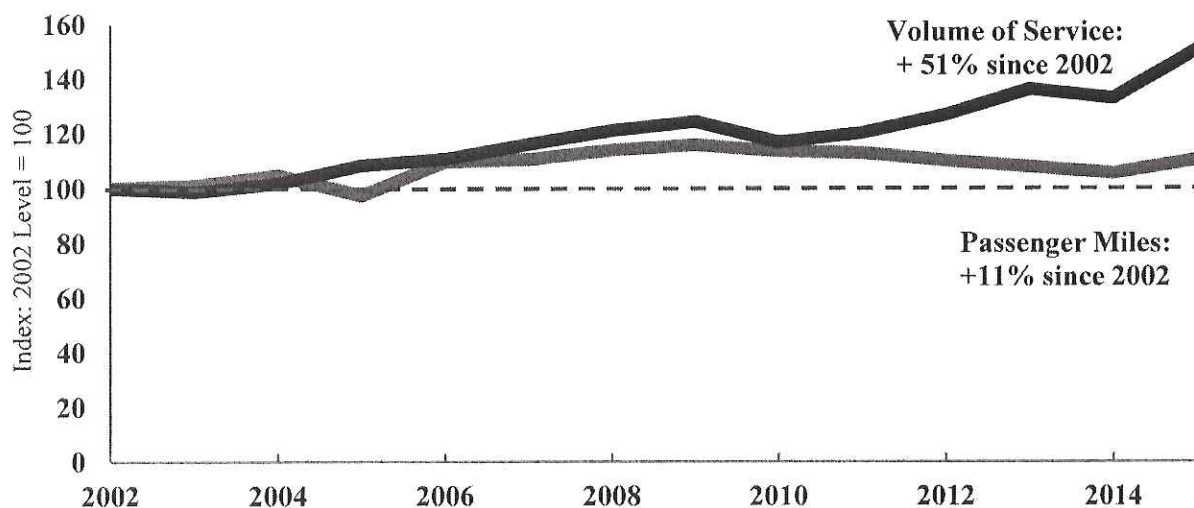


Figure 9. Change in hours of service and passenger miles travelled, WMATA Metrorail. Source: NTD.

Capital Program

WMATA's need for capital investment is determined by the age and condition of its assets. Each asset, from rail cars to escalators, has a useful life. Once this useful life is exceeded, the agency must plan to reconstruct or replace the asset. Different types of assets have very different useful lives, but a general rule of thumb is to assume an average useful life of 30 years.

WMATA's rail system opened in 1976 and quickly expanded. This expansion is shown in Figure 10. The system grew to roughly 70 miles in length in its first 10 years, and today it is over 117 miles long. The original segments of the system began turning 30 in 2006, and today over half the length of the rail system is beyond its theoretical 30-year useful life.

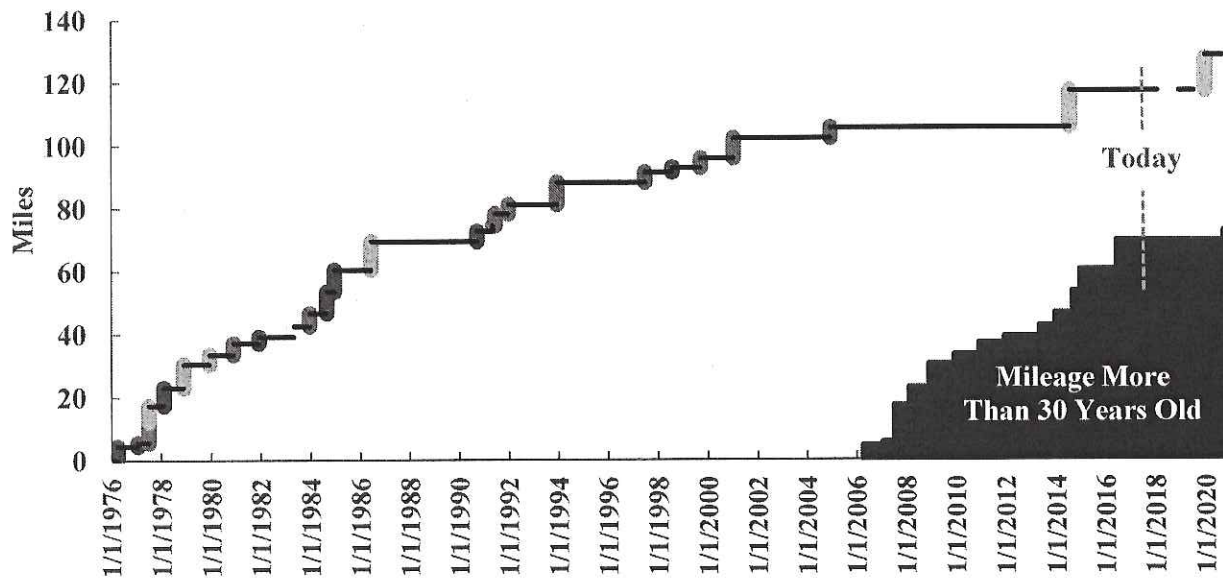


Figure 10. Growth of the Metrorail system since 1976. Source: WMATA.

To address this, an ideal approach would have been to increase capital investment around 2006 to a level sufficient to reconstruct or replace assets as they wore out. Although it is difficult to determine an appropriate theoretical investment level, a rough estimate can be made. A recent assessment by WMATA reported the total value of its asset base to be \$39 billion. Assuming a 30-year useful life for an average asset, the agency could expect to replace roughly 3 percent of its asset base each year at a cost of somewhere around \$1.2 billion per year.

As shown in Figure 11, in FY2017 WMATA achieved approximately this level and plans to do so again in FY2018. However, this level of annual investment was only recently achieved. The gap between necessary investment and actual investment in the preceding decade is a major reason for WMATA's backlog of deteriorated assets with an estimated cost of \$7 billion.

During this period, efforts were being made to increase capital funding. As far back as 2005 the need was identified, and in 2008 Congress passed the Passenger Rail Investment and Improvement Act (PRIIA), which authorized \$150 million per year in new federal capital funds to be matched by an equal amount of new state and local funds. Unfortunately, for various reasons WMATA did not begin receiving these

funds until FY2011, and even then had significant difficulty in ramping up spending to utilize the new revenue. The result was a long period of sustained underinvestment.

Although current investment levels are a major improvement over prior years, it is important to note that the levels achieved since FY2016 are not sustainable given current capital funding provided to WMATA by its federal, state and local funding partners. The current baseline of capital contributions by these funders is approximately \$800 million per year, well below the level of actual spending. In FY2016 WMATA was able to draw down unexpended funds from prior years to make up most of the difference, but in FY2017 and FY2018 the capital budget has been sustained by taking on new debt.

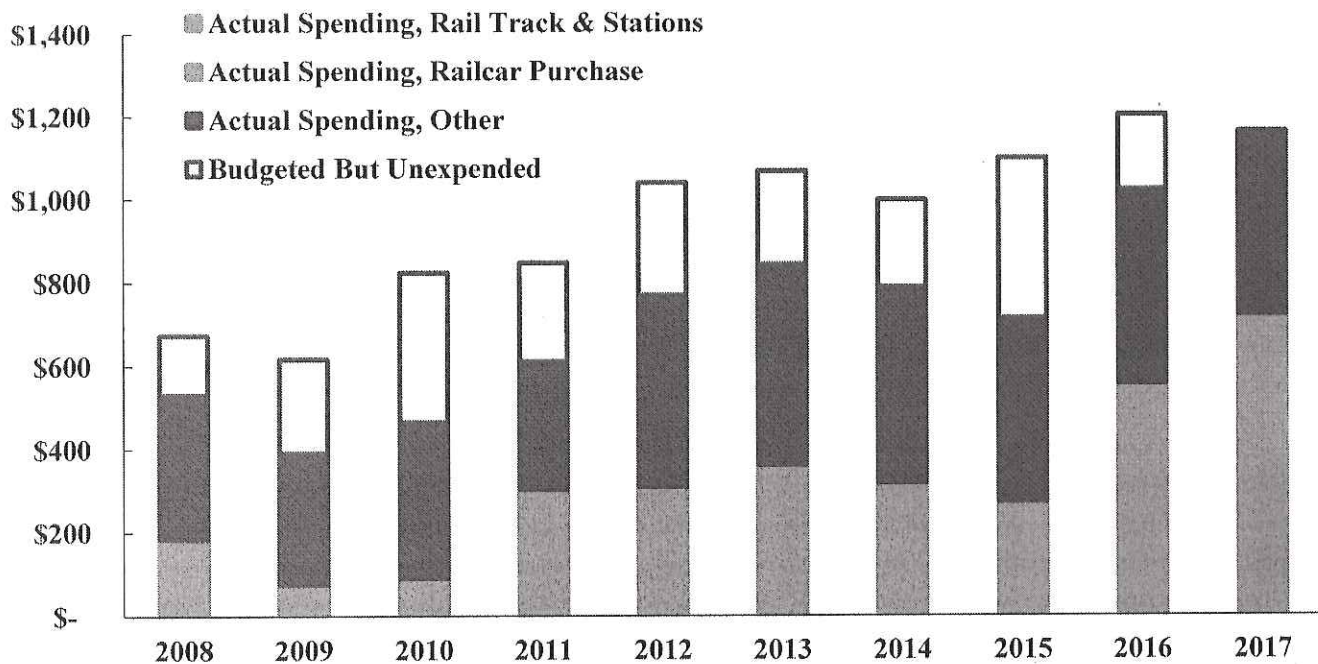


Figure 11. WMATA capital investment, millions of dollars, FY2008 to FY2017. Source: WMATA; WSP calculations.

It will not be possible for WMATA to reduce its backlog of deteriorated assets, or even sustain its current level of investment, without a major commitment of new resources from its funding partners.

Long Term Financial Sustainability

Although WMATA's service delivery costs are generally average for large transit agencies, the level of funds required annually from its state and local funding partners has been growing rapidly, rising at nearly 10 percent per year. As shown in Figure 12, these increases can be traced directly back to four main cost drivers.

- Purchase of new rail cars. WMATA is currently replacing a large share of its rail fleet, and expenditures on new rail cars rose from zero in 2014 to over \$330 million in 2017.
- Increased spending on rail system rehabilitation. Investment in the rail system grew by nearly \$320 million per year from FY2009 to FY2017.

- Growth in contributions to pension plans. As discussed above, WMATA's contributions to pension have grown by more than \$150 million per year since FY2007. After growing rapidly for a decade, contribution levels have stabilized since 2015.
- A large revenue decline due to falling ridership. Revenue from ridership has fallen by \$100 million per year.

Aside from these four factors, WMATA's other costs have grown at a relatively reasonable 3 percent per year for the last dozen years.

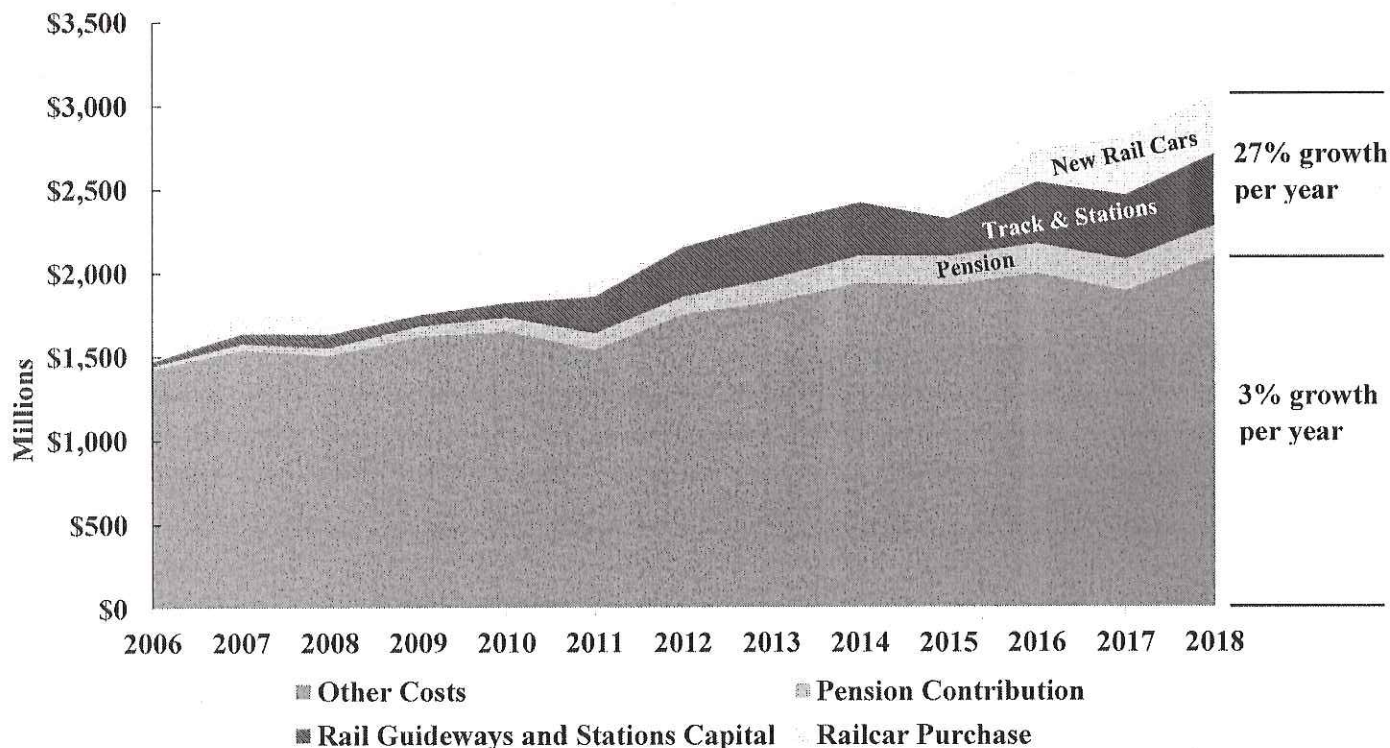


Figure 12. WMATA growth in spending in three major categories vs. all other spending, FY2008 to FY2018. Source: WMATA; WSP calculations.

Within its operating and maintenance budget, WMATA appears to be financially sustainable going forward, although improvements are possible. Several strategies to improve financial outcomes in the O&M budget are described in Part 2.

Within WMATA's capital budget, spending has already risen, but it must rise even further for the system to achieve a state of good repair. This will not be possible without a substantial increase in the level of support provided to WMATA.

Governance

WMATA's board currently consists of 16 members, eight Principal Members and eight Alternate Members. As shown in Figure 13, WMATA's board is larger than all but one peer agency. The average transit agency board has nine members. No peer agency board has alternate members.

WMATA's board currently has nine board committees and subcommittees, which ties it for the largest number among peer agencies. The WMATA board and its committees and subcommittee meet often. Between June 1, 2016 and May 30, 2017, there were 85 such meetings.

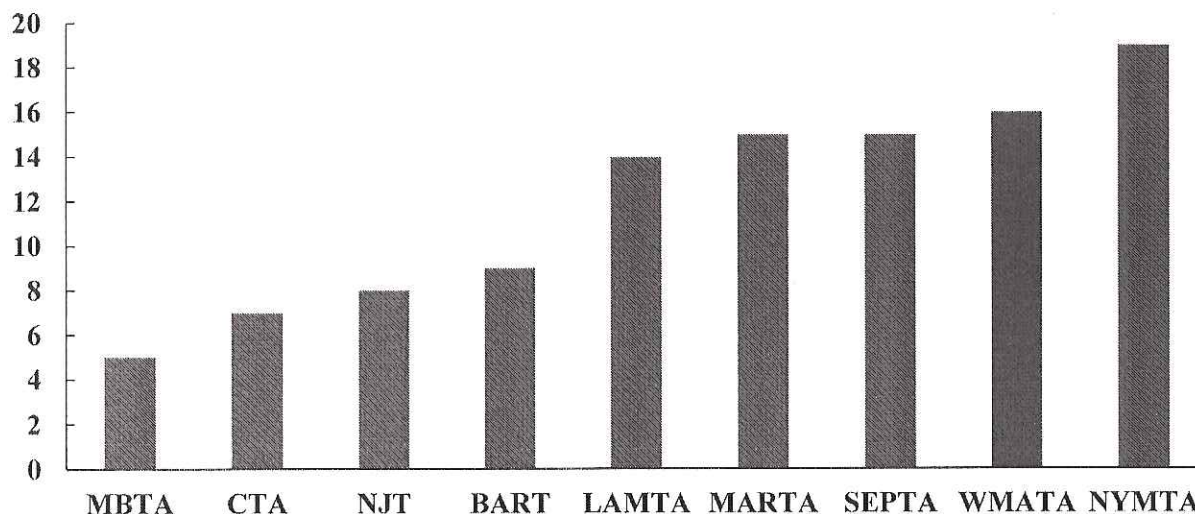


Figure 13. WMATA board size vs. boards at peer agencies. Sources: multiple.

WMATA is unique among peer agencies in giving each of the board contingents representing the three signatory jurisdictions – DC, Maryland and Virginia – a veto over major agency actions. The veto is not exercised often, but anecdotal evidence suggests that its presence nonetheless affects the dynamics of the board. Although none of the peer transit agencies allow a jurisdictional veto, this feature is present at the three other transit agencies in the U.S. that operate under Interstate Compacts: the Port Authority of New York and New Jersey, the Delaware River Port Authority in the Philadelphia region, and the Bi-State Development Agency in the St. Louis region.

WMATA's board includes elected officials from the region, currently four of the 16 members. Arrangements of this type exist in 22 percent of transit agencies. However, in most of these cases there is a key difference. Where a transit agency is supported directly by dedicated taxes, any elected officials on the board can avoid the awkward position of both requesting funds on behalf of the transit agency, and then responding to this request on behalf of their home jurisdiction. This so-called 'dual fiduciary' status exists for WMATA's elected official board members. Among peer agencies, only one board member at one other agency has a similar status.

These features of the WMATA board present governance challenges over and above those faced by other transit agencies. With members often appointed to the board with the explicit understanding they will represent their home jurisdiction's policy, operational and financial preferences, WMATA faces major challenges in sustaining a unified vision for the agency and clear parameters under which management can pursue such a vision.

PART 2. RECOMMENDATIONS

Measures to Reduce Operating Deficits

Figure 14 shows the financial impacts of selected operating deficit reduction measures WMATA could pursue over the next several years. Each measure is described in detail below.

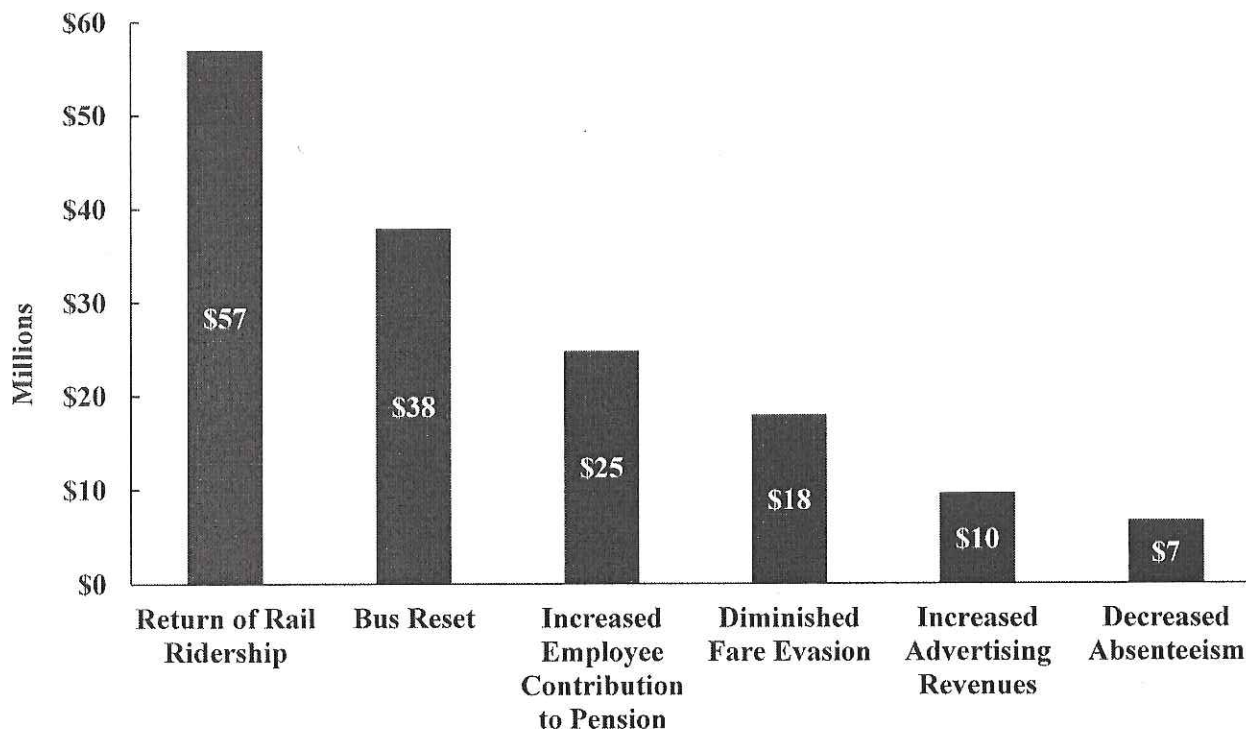


Figure 14. Estimated annualized value of measure to reduce WMATA operating subsidies, in millions of dollars per year at full phase-in. Source: WMATA budget data and WSP analysis.

- *Return of Rail Ridership.* In FY2017 Metrorail ridership was 14.3 percent below FY2015 levels. During this same period, ridership at other U.S. heavy rail systems was also down, but by just 1.9 percent. With WMATA's SafeTrack program of rail system closures to allow for reconstruction now concluded, service reliability is expected to improve, and this opens the possibility that riders who fled the system may begin to return. The scenario depicted here shows the financial effect of Metrorail ridership rising back to a level that is 1.9 percent below the FY2015 level. This is estimated to produce \$76 million in new fare revenue and generate \$19 million in new costs to run more frequent trains to carry the returning riders. The net benefit to the WMATA O&M budget would be \$57 million per year.

To be clear, WMATA management cannot simply decide that riders should return, and at minimum such a recovery would take several years. Whether it occurs will be influenced by many factors, including gasoline prices and regional economic performance, but service reliability was a major factor in the loss of riders and will have a large effect on whether they return. The point of showing this scenario is to focus attention on the how large the effects of changes in ridership can be on agency finances. WMATA's customers are its biggest funder.

- *Bus Reset.* WMATA is among the many transit systems experiencing flat or declining levels of bus ridership, but its difficulties go beyond this. Bus service levels per unit of ridership at WMATA are 25 percent higher than the average of its peers, which drives higher than average costs per rider. There are several possible explanations for this. WMATA could be running service on low-performing routes; its bus garages could be in locations that make for long hauls where no passengers are carried; its route structure could be out of date given changing patterns of demand; fare evasion could be masking the actual level of demand. Each of these could play a role, or all could, but the depth of analysis necessary to understand the source of WMATA's difficulties was not possible for this report.

Nevertheless, an estimate was made of the possible financial consequences of a more efficient Metrobus system. The scenario presented here includes several elements. It assumes that bus fares are raised by 10 cents to \$2.10, closer to the average base fare among WMATA's peer agencies. In addition, the scenario assumes that WMATA can achieve a five percent reduction in Metrobus operating costs achieved through more efficient routing or other service adjustments or operating practices. It is assumed that higher fares and adjusted service could trigger some reduction in bus patronage, which is taken into account by the analysis. In total, this scenario could result in a reduced need for operating subsidies of \$38 million per year once fully phased in.

This analysis is presented not so much to endorse specific bus service changes, but to illustrate that the amount of money at stake makes this an issue worth serious attention. Determining exactly how to adjust Metrobus service will require more detailed analysis, and WMATA should consider undertaking what we are calling a 'bus reset'; that is, a comprehensive bus service study that looks at routing, schedules, bus garage locations, work practices and the other major attributes of the bus system.

- *Increased Employee Contribution to Pension.* On average, workers in U.S. defined benefit pension plans contribute 7.1 percent of their salary to pension according to the Bureau of Labor Statistics. The average member of WMATA's unionized workforce contributes 3.1 percent of salary. (Most contribute three percent, but Transit Police, who operate under their own contract, contribute at 7.3 percent.) Raising employee contribution levels to the national average would reduce WMATA's need for operating subsidies by \$25 million per year. Pension contribution amounts are set contractually between management and unions, and so making this change would require a change to current WMATA contracts either through negotiation or arbitration.
- *Diminished Fare Evasion.* Very little reliable information exists about the extent of fare evasion at WMATA. Nevertheless, a rough estimate was made. This scenario assumes that fare evasion deprives WMATA of 5 percent of potential revenues from bus and rail fares, and that stricter enforcement and other measures could cut this loss by 50 percent. An estimate of the incremental cost of undertaking such enforcement measures was not made. Under this scenario WMATA could reduce its required O&M subsidies by \$18 million per year.
- *Increasing Advertising Revenues.* In 2015, WMATA's advertising revenues were proportionally the lowest among the large transit agencies studied. Advertising revenues were highest at the Chicago Transit Authority (CTA) at 1.84 percent of total O&M costs, while WMATA's advertising revenue was

only 1.32% percent of O&M costs. Were WMATA to increase advertising revenues to CTA's level, roughly \$10 million per year in additional funds could be generated.

- *Decreased Absenteeism.* When a worker fails to show up for a shift and must be replaced by someone who qualifies for overtime pay, one result is added cost. In FY2017, approximately 940,000 labor hours were missed due to three categories of absenteeism – sick leave, unpaid leave and absent without leave. This scenario estimates the cost savings that would accrue to WMATA due to lower overtime costs if these three categories of absenteeism were reduced by 20 percent. The estimated savings would be \$7 million per year.

Implementation of these measures could be expected to take several years, and achieving full results on all simultaneously would be difficult. Nonetheless, it seems reasonable to estimate a possible reduction in expected operating subsidies of at least \$40 million per year after several years. As described below, a reduction in operating payments by the region's jurisdictions of this amount would allow funds to be shifted to capital needs.

Additional Capital Funding

To assess the adequacy of WMATA's current sources of capital funding, a model of WMATA's state-of-good-repair needs and capital funding sources was developed out to 2040. It projects that current pledged capital revenues from federal, state and local sources will average approximately \$830 million per year from FY2018 to FY2026. This figure assumes that Federal PRIIA funding continues at current levels. These funds are shown in dark blue in Figure 15.

Limiting WMATA's capital program to these funds would have dire consequences. Capital investment would fall from the \$1.16 billion achieved in FY2017 to a level too low to even address the new annual needs that will arise each year in the future, let alone tackle the large backlog of need accumulated in past years. Instead of getting smaller, WMATA's backlog of deteriorated assets would get larger. If WMATA's capital spending is constrained at the level of current funding commitments, the system's condition will get worse, not better.

The next task was to estimate the level of additional capital funding required to avoid this outcome. The scenario shown in Figure 15 is designed to meet three goals: 1. fund WMATA's ongoing state of good repair needs in future years as they arise; 2. fully eliminate WMATA's backlog of deteriorated assets as quickly as possible; and 3. pay any debt service generated by new borrowing using capital funds. In performing this analysis the following assumptions were used:

- Only state of good repair costs were considered; any system enhancements would need to be supported with other funds.
- The speed at which work can be accomplished was estimated for five different types of investment: vehicles, guideway, stations, facilities, and systems. For example, it was assumed that vehicle purchases could ramp up quickly once new funding is received, while the ability to increase the pace of work on guideway and stations is more limited due to the need to continue carrying passengers.
- New funding would start on January 1, 2019.
- Federal PRIIA funds were assumed to continue at \$150 million per year.

- Federal transit formula grants were assumed to grow at 1.5 percent per year.
- Both construction cost inflation and growth of the new revenue source were assumed to be two percent per year.

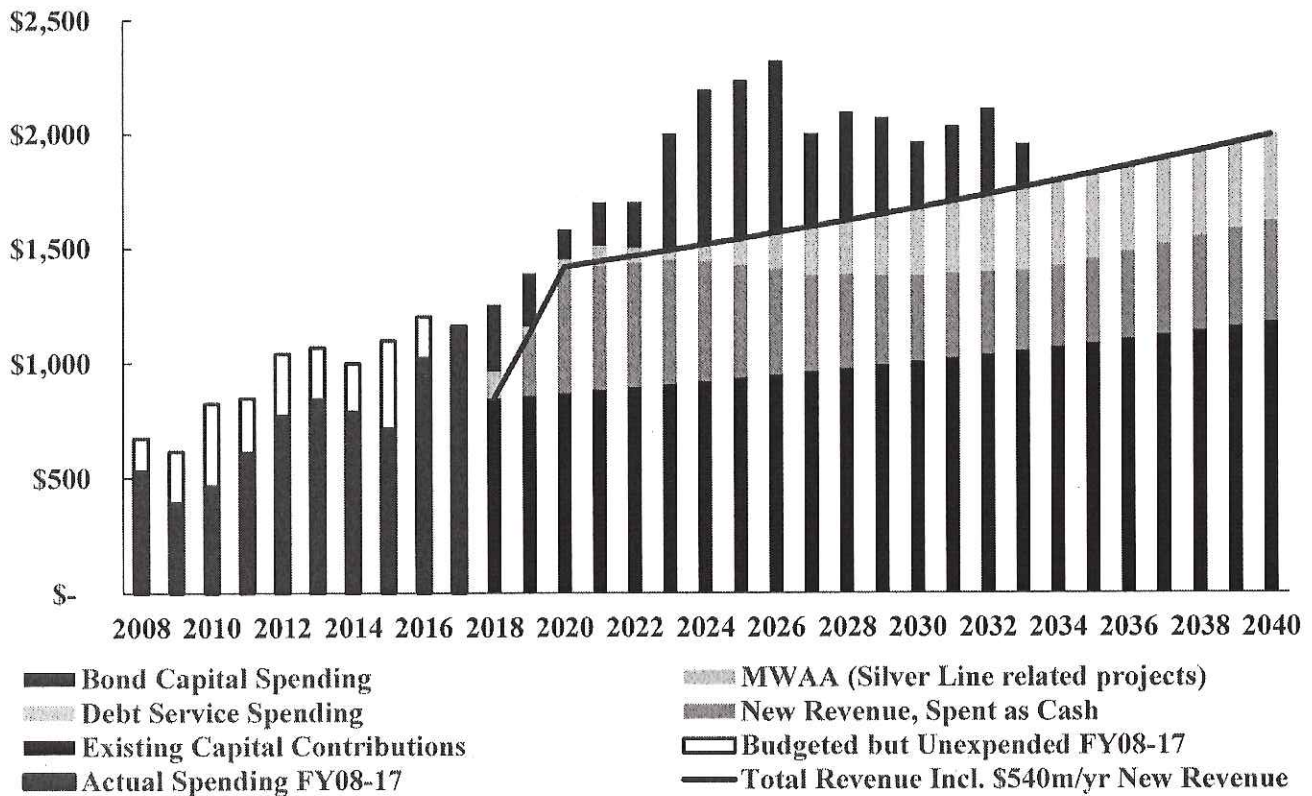


Figure 15. Model of WMATA capital spending with additional revenues, millions of dollars, 2018-2040. Source: WSP.

Based on these parameters, it was determined that \$540 million per year in new capital funding (line) would be needed to meet the needs identified. Some of the new funds would be spent as cash on a pay-as-you-go basis (light blue) while some would be used to support new borrowing. Bond funds expended each year are shown in red, and debt service on this borrowing is shown in orange. Spending would be highest in 2024-2026 as a new round of vehicle replacements takes place; after this it would decline slightly as backlog projects for guideway and other areas where spending is most constrained are completed. The state of good repair backlog would be fully retired in FY2033, and thereafter WMATA would have sufficient funds to pay all required debt service and prevent a new backlog from developing.

Strategies to reduce the need for operating subsidies by \$40 million per year were described in the previous section, and shifting these payments from operating to capital would allow WMATA to achieve a state of good repair with a new funding source of \$500 million per year.

To eliminate its state-of-good-repair backlog on this schedule, WMATA would need to borrow an estimated additional \$5.9 billion. Issuing bonds in this amount would incur debt service costs that peak at \$375 million per year, and so most or all of a new revenue source of \$500 million per year would need to be dedicated in a manner adequate to secure bonds.